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THE SHORT COURSE TRADE SCHOOL

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At the present time there is an unprecedented and widespread interest in the subject of industrial education. Skilled labor is scarce, and the available recruits for the industrial army lack those essential qualifications for craftsmanship which our future skilled workmen should possess. It is being generally acknowledged that trade schools are needed, but educators and others are by no means agreed as to the kind of schools best adapted to give our youth that training necessary to supply the qualifications for craftsmanship.

Many articles on this subject have lately appeared, but the tendency of most of the writers has been to discuss the need for industrial training, and suggest new plans for the establishment of various types of trade schools. Few have given us specific accounts of existing schools, with a critical examination of the methods by which they have for many years attempted to meet the demand for industrial training.

With that object in view I shall endeavor in this paper to define clearly the type known as the short-course trade school, to present a careful analysis of the reasons that have led to the establishment of such schools, and to show that they must continue to be a part of any complete system of industrial education. Let us for a moment consider the causes that have led to the present interest in the subject of industrial education.

Until very recent times it was thought sufficient to give all an opportunity to secure an elementary school training. The training for a vocation—professional, mercantile, or industrial—was obtained by a form of apprenticeship. In the development of the educational system to meet the requirements of modern conditions, it has been gradually extended so that at present teachers, lawyers, physicians, engineers and others are directly trained for their respective callings in professional or technical schools. Such a method is now accepted as an essential one for the preparation of those of our people who desire to enter those vocations. In view of present industrial and

economic conditions a further advance in our educational progress is necessary. We must as directly train our youth for the trades, as we now do for the higher vocations, and in doing this we must consider the needs of all grades of wage-earners in those trades.

It is growing more apparent that with few exceptions the tendency of the present training for trades, such as it is, has been mainly in the direction of preparing a small number who may be expected to become ultimately the leaders in those trades, to the neglect of the far greater number who must form the rank and file. Quite as important is the consideration of the needs of those who for economic reasons are unable to devote so long a period to preliminary training, and who are not mentally equipped to receive a training much beyond an elementary knowledge of reading, writing and mathematics; but do possess the natural ability and desire to become skilled mechanics. It is to those of our youth who wish to enter the mechanical trades, and who will in all likelihood become and remain skilled workmen, that the short-course trade school aims to be of service; rather than to the more fortunate ones who by their economic circumstances and exceptional natural capacity will no doubt rise above that grade.

While in some specific manufacturing industries employers are successfully training their own skilled workmen, such a method can never become general. In many industries, for example, the building trades, such a method is impracticable. Again, at the best this exceptional opportunity to learn a trade can be given to only a fortunate small number. Such a method is a business enterprise, and the bestowal of its benefits depends primarily on the question of the supply of labor, rather than the demand for industrial education. In general, it is safe to say that the great majority of the employers of labor realize the scarcity of skilled workmen and their own inability to train the material they now secure as apprentices or helpers.

Those of our youth who are compelled to enter unskilled occupations at an early age, and later have the desire and often the ability to become skilled workmen, have learned that it is practically impossible to obtain employment in any capacity in the mechanical trades unless they can show that they possess a certain amount of experience. That the opportunity for some form of industrial training appeals to these is evidenced by the growth of the correspon-

dence schools, the evening continuation schools, and the fact that the few existing trade schools are so well attended.

In any attempt to reach a decision as to the kind of trade schools best adapted to our present needs, it seems only logical also to consider the class of our youth who may be expected to attend them. The employers of labor claim that the quality of the present available recruits for the industrial army is poor, being incompetent, untrustworthy and altogether undesirable. The tendency of all the proposed remedies to improve this condition is an attempt to supply a better class of recruits by inducing those who are likely to be our future workmen to remain longer at school or until they are old enough to enter the skilled industries as beginners or helpers. They are to receive a special training which is to include practical work in trades with related academic studies. This training is, of course, intended to attract that very large number who now leave our schools between fourteen and fifteen years of age, to enter the unskilled occupations. If we are unable to retain them in the schools for that longer period, the remedy will fail to accomplish the desired result.

Manual training, which in many respects is similar to this proposed industrial training, and which likewise required an extension of time given to schooling, has entirely failed to prepare a sufficient number of our youth for industrial occupations. If manual training has failed, is it safe to assume that a similar form of industrial training will succeed?

While it is granted that a very large number do leave school at about fourteen years of age, it is claimed that many parents would keep their children at school for a longer period if such schooling would prepare them to enter skilled industries. Is this not merely the expression of a hope rather than a fact upon which to base the assumption that such schooling would accomplish the desired result? A similar hope was no doubt originally entertained at the time of the introduction of manual training.

It is of importance to understand from what sources our present skilled labor is recruited. The last census informs us that about sixty per cent of those engaged in manufacturing and mechanical pursuits are foreigners or natives of foreign parentage, and the remaining forty per cent comprise those native Americans who do not regard such occupations as undesirable or lowering

to self-respect, and are contented to become and remain skilled workmen. It is the children of these classes that in such large numbers are leaving our elementary schools before the completion of the course because it is necessary for them to contribute to the family support as soon as the law permits them to obtain employment. Chiefly from this class it is unquestionably true that the ranks of our future workmen will continue to be recruited or until the time when another class of our American youth shall cease to regard the skilled mechanical trades as undesirable occupations. In justice to this large and willing class we must endeavor, by giving them the opportunity to secure better industrial training, to improve their standard and to make them more competent, trustworthy and desirable as recruiting material.

In the future, under better economic conditions, when certain children of fourteen years of age shall not be compelled to work, it is conceivable that we may be able to accomplish this in a better manner, yet to-day the short-course trade school appears to be the most practical way of securing adequate results. There are two well-known short-course trade schools that have in the past ten years or so turned out several thousands of graduates, a very large percentage of whom are to-day journeymen mechanics earning good wages, and as such are useful and necessary members of the community. Such schools of all the types so far evolved for the purpose have conspicuously accomplished results sufficient to warrant their existence. Again, demand is generally a safe indication of worth when applied to a question of this nature. Both of these schools annually turn away for lack of accommodation several hundred applicants for instruction, although those attending the schools are in nearly all instances wage-earners who make a sacrifice of money and a certain wage-earning period in order to undertake a course of instruction which they are convinced will benefit them materially. Young persons of this character are not apt to remain long in doubt as to the real value of such schools.

While the fact is to be regretted that a very large number of our youth upon leaving the elementary schools devote the next few years of their life to unskilled labor, rather than further schooling, yet it cannot be denied that by so doing they gain some advantages. Such a course develops a sense of responsibility among the more capable, and an earnest desire to change their unskilled vocation

for a skilled one with its higher reward. They realize in a very short time the limitations of their position in life, and are, therefore, much better fitted to appreciate and derive benefit from any available opportunity to improve their condition. That the short-course trade schools now in existence have offered this opportunity cannot be denied, and by virtue of their success, I believe I am fully justified in recommending to the consideration of all interested in the problem of industrial education, this particular type of trade school. The establishment of similar schools would at once meet a present urgent demand for some form of industrial training.

The aim of the short-course trade school should be to provide an opportunity for a carefully selected number to secure in as short a time as practicable a sufficient training to enable them to obtain employment in the skilled trades as beginners or helpers. Under this plan it is assumed that an efficient short course of industrial training, followed by that practical experience gained by working at a trade, will suffice to give that degree of skill now required of the average skilled workman. This training should be given only to those of an age possessing the physical ability and sense of responsibility required of such a class of labor. Employers in the skilled trades do not want beginners or helpers under sixteen years of age, and in many cases require them to be some years older.

The main points to be considered in the organization and establishment of a short-course trade school are the following: Plant, location, instructors, courses of instruction and requirements for admission and graduation.

The plant should consist of a suitable building properly equipped to give instruction in several trades, and to accommodate at one time several hundred pupils. This is far more efficient and economical than the establishment of scattered trade classes. The location should be where the demand is most urgent; that is, as convenient as possible to the homes of the working class. The teaching force should consist of a superintendent and a corps of instructors. The superintendent should be a technically trained man with practical experience, a good executive officer and administrator: the instructors, mechanics of the grade of foremen, not necessarily graduates of technical or manual training schools or trained teachers as generally understood. To familiarize the pupils with shop methods and customs, they should be mechanics who have worked

and risen in the trade, and who will be an example to the pupils whose ambition will be to attain a like skill. The trades taught should be those for which locally there is the largest demand for workers.

The length of the courses need not much exceed five months, which would permit two classes a year to be under instruction. This instruction should be given in day classes of eight hours each—the regular working day—giving approximately eight hundred working hours to a course.

The work of the courses should comprise academic and shop instruction. The academic instruction should consist of mechanical or freehand drawing, and elementary mathematics with especial attention to “shop arithmetic,” and illustrated lectures on the theory and principles of the trades. The period devoted to this should be about one hundred and fifty hours. The shop instruction should approximate as nearly as possible to the actual performance of the practical operations of the trades, with the purpose of giving the pupils a general familiarity with those different operations. This would require about six hundred and fifty hours of instruction. Speed of execution and further experience will be best acquired by actual work at the trades.

The pupils for such schools should be selected with great care, and those who fail to pass a short probationary period satisfactorily should be dismissed. It is poor judgment and worse philanthropy to permit youths to learn trades, however great their desire, unless they possess a certain natural capacity and fitness for the work.

The principal requirements for admission should be a proper degree of maturity and physical ability to perform the work demanded of a helper. On that account pupils should not be admitted under sixteen years of age. The possession of an elementary school training is necessary, but too much stress should not be laid upon educational qualifications, as a youth of intelligence who has had an ordinary schooling can readily acquire such education as is essential while learning the trade.

In order to maintain efficiency frequent examinations must be held during the course, and at its completion any pupil who does not possess the necessary ability of a helper should not be **granted** a certificate of proficiency.

Evening classes in elementary industrial training¹ are seriously objectionable for the following reasons: Twenty-two weeks of day class instruction are required as a minimum to properly equip pupils to enter trades as helpers. One hundred and seven weeks of evening class instruction, or approximately three school years, are necessary to give that equivalent, and the percentage of those completing the course would in consequence be much smaller, as many would not remain for that length of time. As a result pupils would seek work in the trade before they were fully prepared, which would at once reflect upon the standing of the schools and defeat their aim. We have only to consider in such existing schools the percentage of the original enrolment that complete the course to be convinced of this fact. Again, by offering such training in the evening we would make it easy for a great number to attempt to learn a trade at no sacrifice on their part, and in consequence such schools would be overrun with applicants who have no very definite aims. But, as such instruction could be undertaken without interfering with their usual employment, they would be tempted to try the experiment, thus giving as a result a very low percentage of efficiency and great waste of effort.

On the other hand, those attending the short-course day classes will be compelled to make a sacrifice of a certain wage-earning period, and as a result will appreciate the advantages in proportion to that sacrifice. Nearly all who attend will have definitely determined to earn a trade, and to make that particular trade a means of livelihood. In general, it is safe to assume that the greater the sacrifice the greater the appreciation.

There are among the privately established trade schools in this country several of the short-course type, and in one case² such a school has been incorporated in the public school system. While the oldest example, and in fact the first successful trade school established in this country, is the New York Trade School, founded by the late Richard T. Auchmuty in 1881, I shall describe for pur-

¹ "The chief objective point of recent legislation for industrial schools in Wurtemberg, Germany, is to furnish opportunity for instruction during the work days, instead of evenings, Sundays, or holidays, as before."

"The minimum number of hours per year is to be two hundred and eighty, and the courses will extend over a term of three years, making a total of eight hundred and forty hours."—"The Industrial Improvement Schools of Wurtemberg," by Albert A. Snowden, *Teachers' College Record*. (New York), November, 1907.

² Milwaukee School of Trades, Milwaukee, Wis.

pose of illustration the Baron de Hirsch Trade School, which I believe more nearly approaches in its plan and accomplishment the type of school to be desired.

The Baron de Hirsch Trade School of New York City was established in the fall of 1891 by the Baron de Hirsch Fund. The school has been in existence for seventeen years, and while at first it was difficult to secure pupils, at the present time the number of applicants far exceeds the capacity of the school. The annual expense to graduate 260 pupils amounts to \$34,500, or \$132 per capita. The object of the school is to fit young men, in as short a time as possible, for employment in the mechanical and building trades. For this purpose it is the aim of each of the courses to give the pupil a sufficient practical working knowledge of a trade to enable him readily to secure employment in that trade as a helper, and enough of the theory of the trade to prepare him for certain and rapid advancement to the grade of journeyman.

Instruction is given in day classes only, because it is believed that evening classes are not an efficient means for training beginners. Two classes are admitted each year, one in February and one in August, and pupils are not admitted during the term. Each of the courses requires five and one-half months for completion on the basis of eight hours a day, giving eight hundred and thirty working hours to a course.

Applicants for admission must be Jews, able-bodied, at least sixteen years of age, and must satisfy the superintendent as to their fitness to learn a trade. The average age of the pupils admitted is seventeen and one-half years. They, therefore, are generally old enough to have a definite purpose in view and a full appreciation of the value of the training received. Each applicant must be able to speak, read and write the English language. This was made a requirement owing to the fact that some sixty per cent of the pupils are recent immigrants.

There are no tuition fees, but applicants must show that they have some means of support while learning the trade. Over ninety per cent of the pupils are wage-earners before entrance to the school, and it is recognized that the sacrifice of a wage-earning period is sufficient to make them realize that they are paying something for their instruction. All accepted applicants are given a trial during a probationary period of fourteen working days, and at the end of

that period, if the pupil has shown sufficient earnestness and aptitude, he is enrolled as a regular member of the class.

Courses are provided in the following trades: machinist, carpentry, electrical work, plumbing, house and fresco painting and sign painting. Each course is planned to give the pupil seven hundred and forty hours of practical shop work, and ninety hours of correlated academic work. The practical shop work is directly in charge of instructors who are skilled mechanics of long experience. The shop courses are designed to give a maximum amount of actual practice at the various operations of the trades, and all work is done as far as possible in the same manner as in actual practice.

The theoretical side of the trade is explained in frequent lectures and shop talks. Various diagrams and models are used to clearly illustrate the subjects, and the shop notes are taken down by the pupils to be afterward carefully copied at home into notebooks especially provided for that purpose. They are at the same time given suitable printed diagrams and tables for purpose of illustration, and these are to be bound up with their shop notes.

The academic work includes instruction in mechanical and geometrical drawing, mensuration and shop arithmetic. The instructors are technically trained men and skilled draughtsmen. As the shop work is done when possible from working drawings, the course in drawing is made to correlate directly with the shop courses. Primarily the course is intended to enable the pupils to read working drawings, not to train draughtsmen. The practice in geometrical drawing is given as a very useful and efficient form of mental training to show the necessity of accuracy of workmanship. The course in arithmetic includes a review of the fundamental elements required of those pupils who are deficient in the subject; and a course in mensuration, with explanation of the fundamental formulas and practice in the application of them to practical problems of the trades.

During the term frequent examinations are given, and those pupils who fail to attain a required standard of efficiency are dismissed from the school. At the termination of the course a final examination is given, and each graduate is given a certificate and a kit of tools.

The school has enrolled to date 2,464 pupils, of which 2,062 have graduated. An average of eighty-four per cent of those

enrolled remain throughout the course and graduate. Attempts are made to keep in touch with recent graduates, which have proven successful with about sixty per cent of those of three years' standing. Their reports show that at least eighty per cent are employed in the trades learned at the school.

A recent investigation has shown that the average wages of some two hundred pupils before entrance to the school was \$5.39 per week. They were engaged in the various unskilled occupations that do not require any previous training or preparation. After receiving a five and a half months' course as a special preparation to enter trades, they earned immediately after graduation an average of \$7.54 per week, or a gain of \$2.15 due to their ability to enter a skilled trade. There has been such a demand for skilled helpers that graduates find little difficulty in obtaining employment at wages ranging from \$5.00 to \$15.00 a week, and in about two years' time many graduates are able to earn journeymen's wages.

In order that schools of this type may be a real benefit to the community they must, by a careful selection of pupils and a rigid insistence on earnest and thorough work, maintain such a standard of efficiency that employers of labor will prefer, and perhaps finally insist, that all those seeking employment as beginners in the skilled trades shall have had a preliminary training in a trade school.